

CALIFORNIA.~~STATE~~ BOARD OF HEALTH

MONTHLY BULLETIN.

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STATE FOOD AND DRUG LABORATORY.

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CALIFORNIA PUBLIC HEALTH ASSOCIATION.

The California Public Health Association will hold its semiannual meeting this year in Santa Cruz, during one day of the session of the League of California Municipalities, which is to be held September 21st to 24th. The exact date and details of the program will be published in the press and sent individually to those persons known to be interested in the Association.

The annual meetings of the Association with the California Medical Society have always been most profitable, and the officers believe that the acceptance of the invitation to meet with the League of Municipalities will be equally effective in interesting the influential business men of California in public health work.

In addition to this meeting, the Association is planning this year four district conferences with the principal health organizations of the State. The conferences are as follows:

1. *Autumn Quarter*—District conference with the Medical Milk Commissions of California.
2. *Winter Quarter*—District conference with the Associations for the Study and Prevention of Tuberculosis.
3. *Spring Quarter*—District conference with the Associations for the Study and Prevention of Syphilis and Gonorrhea.
4. *Summer Quarter*—District conference with the California Playgrounds Associations.

It is proposed to organize these quarterly conferences on the basis of simultaneous district meetings throughout the State. The details of this work are in the hands of the California Public Health Commission of the State Medical Society.

The Public Health Association is an organization without dues or other expense connected with membership. All persons interested are invited to constitute themselves delegates to the coming meeting in Santa Cruz. The officers for the year are Dr. W. F. Snow, Stanford University, President; Dr. N. K. Foster, Oakland, Secretary.

A NEW MOVEMENT.

The State Charities Aid Association Bulletin No. 84 gives an account of two new methods of fighting disease. A national fraternal insurance organization—The Workmen's Circle—will assess its members nine cents per month to build and maintain a tuberculosis hospital in Liberty, N. Y. The organization has some 27,000 members, who will thus contribute approximately \$30,000 to this cause.

One of the large life insurance corporations will also establish a most valuable "health bureau," which will aim to help the policyholders by (1) prevention of disease, (2) discovering disease in time to check or cure it. This is to be done through the medium of (1) health bulletins; (2) correspondence; (3) free medical examination every two years to such policyholders as request it.

These are signs of the times, and indicate clearly that we are slowly organizing along business lines an army of defense against our great biological enemies.

THE QUESTION OF VACCINATION.

The present controversies which are being reported in the newspapers from various sections of the State relative to the enforcement of the State law requiring vaccination of all public school children are largely exaggerated, but they illustrate a point which citizens should pause to consider. Any one who studies without prejudice the arguments for and against vaccination, as applied in any given community, can not fail to say with Sir Roger de Coverley, "Much may be said on either side."

The law is a wise and a just measure for the health protection of the State. It has been upheld by our courts after they have informed themselves on the scientific and historical facts of vaccination as a weapon for fighting smallpox. This is as it should be, except that the law fails to include all of our citizens.

Afterward comes the application of the law—and trouble, and loss of life at times. These things are not because the law is at fault. Our schools and our newspapers are at fault for not teaching the public the same facts that convinced our legislators. Our officials are at fault for not adopting and enforcing uniform methods of administering the law. Our physicians are at fault for not demanding the same compliance with surgical precautions for cleanliness that is observed in serious operations. As citizens, we are collectively at fault in not applying business principles to our public and personal health problems. It is the belief of the State Board of Health in demanding the proper enforcement of the law in all schools this fall, without exception, that it will receive the approval and coöperation of the entire thinking population of the State.

A THREATENED INVASION.

Three hundred and fifty Californians will die between now and Christmas unless unforeseen circumstances deter the enemy from continuing the attack. This will represent the operations of but a small division of the biological army which has carried on a guerrilla warfare against us since the beginning of our race. The typhoid corps of this army has been scouting in California since January, and is now prepared to begin its operations in earnest. One hundred and seventy-seven people have already been killed during these scouting forays, and basing estimates on the successful invasions carried out in 1907 and 1908, we may expect at least 5,000 dead and wounded when the casualties are enumerated from the battlefields in the coming campaign.

The public is *not* alarmed!

Typhoid fever is such a deadly enemy because of its method of warfare. An attack is planned upon a city, and a legion of typhoid bacilli are detailed for the work. Failures follow one attempt after another to effect an entrance into the city through its water supply, its vegetables, its berries, and the numerous other products of commerce, until a chance fly, like the Trojan horse of old, is used as a means of transferring the remnant of the legion to the milk cans of a dairy, and thence by easy stages past the lips of the unsuspecting citizens. Two weeks ensue, during which the walls of the invaded alimentary canals are being undermined. The battle of life and death is begun between the body and the bacillus. The alarm is sounded in the city, but the main army of typhoid bacilli have moved on two weeks before to the attack on some distant point. The officials can only examine the defenses to explain how it all happened, and tabulate the number of killed and wounded. It matters not if some of the enemy may escape through the city's sewer into a nearby river, and to repeat the disaster in some city downstream. Even the repair of the defenses of the city is put off in the hope that the enemy will not return to the attack.

This is the story of 500 death tragedies a year in California. Proper sewage disposal, protected water supplies, good house sanitation will prevent it all.

SPECULATION.

Group.	Estimated Population: 1908.	Deaths: 1908.	
		All Causes.	Typhoid Fever.
River Cities—			
Redding	3,850	90	2
Red Bluff	2,864	60	2
Colusa	1,529	26	5
Sacramento	31,602	755	30
Rio Vista	706	10	2
Totals	40,551	941	41
Coast Cities—			
Pacific Grove	1,475	41	0
Monterey	1,820	76	0
Watsonville	4,632	103	2
Salinas	4,080	63	1
Santa Barbara	7,163	175	1
San Diego	19,620	701	5
Totals	38,790	1,159	9

These two groups of cities represent about the same average of sanitary conditions, prosperity, growth, social customs, and population; but one group gets its water supply unfiltered from the Sacramento River, and empties its sewage untreated into that same river,* while the second group has good driven well or protected mountain surface water, and sewers into salt water.†

The cities along the Sacramento River have four and one-half times the number of deaths from typhoid fever reported in the Coast group; and their proportion of deaths from typhoid is one out of every twenty-three deaths from all causes, as contrasted with one death out of every 129 from all causes in the Coast group. At the same time, the total death-rate for the Sacramento River group is only one death out of each 43 of the population, in comparison with one death out of each 33 of population in the Coast group.

Each group has a large city. The actual population of Sacramento in 1900 was 29,282, that of San Diego 17,700. Both cities have experienced a remarkable growth in the past ten years, but according to the United States Census Bureau method of estimation Sacramento would now be only 1.6 times larger than San Diego, while its typhoid death-rate is six times as great.

This was not due to an epidemic, as is shown by the following data: Number of cases, January 3, February 2, March 2, April 0, May 5, June 0, July 1, August 4, September 5, October 2, November 4, December 2. Was it due to typhoid cases brought into Sacramento for hospital treatment? Eight of the thirty cases contracted the disease outside of Sacramento.

The localities where the disease was contracted were one each from Riverside Road, Walnut Grove, Courtland, Sherman Island, Knights Landing, Clarksburg, Broderick, and Williams—six out of the eight being river towns, and four of this number being located below the discharge of Sacramento's sewage into the river.

These figures are given to illustrate the many factors that must enter into a fair discussion of an epidemiological problem. An accurate rating of all the cities with freeholders' charters is included in the Statistician's report. It will be seen that Fresno heads the list, while Pasadena and Napa are at the bottom. Why?

PTOMAINÉ POISONING.

The special article by the Director of the Pure Food and Drug Laboratory should be read with care. Ptomainé poisoning and typhoid fever are very frequently confused in the minds of the citizens.

The article by the Director of the Hygienic Laboratory is also pertinent to the subject.

* Rio Vista and Redding only partially sewer into the Sacramento.

† Watsonville and Salinas partly excepted.

DEPARTMENT OF VITAL STATISTICS.

GEORGE D. LESLIE, STATISTICIAN.

TYPHOID FEVER IN CALIFORNIA CITIES.

Typhoid fever causes relatively more deaths in the rural districts of California than in the twenty-four cities having freeholders' charters. Of each 1,000 deaths in the rural districts in 1908 no less than 19.8 were from typhoid fever, against 15.3 for the twenty-four cities together, an excess of 4.5 in the proportion per 1,000 for rural districts. The detailed figures are as follows:

Number and Proportion of Deaths from Typhoid Fever, for Cities and Rest of State: 1908.

Population Group.	Deaths: 1908.	Typhoid Fever.	Propor- tion per 1,000 Deaths.
CALIFORNIA -----	31,287	540	17.3
24 Freeholders' charter cities -----	17,480	267	15.3
Rest of State -----	13,807	273	19.8

Of the twenty-four cities, twelve have proportions above the city average and twelve below, as appears from the following table:

Number and Proportion of Deaths from Typhoid Fever for Cities, in Decreasing Order: 1908.

City.	Deaths: 1908.	Typhoid Fever.	Propor- tion per 1,000 Deaths.
Fresno -----	365	18*	49.3*
Sacramento -----	755	30†	39.7†
San Bernardino -----	262	9‡	34.4‡
Santa Cruz -----	167	5	29.9
Alameda -----	345	9	26.1
San Jose -----	389	9	23.1
Long Beach -----	219	5	22.8
Riverside -----	204	4	19.6
Watsonville -----	103	2	19.4
Santa Monica -----	110	2	18.2
Oakland -----	1,646	27	16.4
Salinas -----	63	1	15.9
24 Freeholders' charter cities -----	17,480	267	15.3
Los Angeles -----	3,752	49	13.1
Stockton -----	481	6	12.5
San Francisco -----	6,260	77	12.3
Grass Valley -----	88	1	11.4
Eureka -----	198	2	10.1
Santa Rosa -----	107	1	9.3
San Diego -----	701	5	7.1
Berkeley -----	448	3	6.7
Santa Barbara -----	175	1	5.7
Vallejo -----	192	1	5.2
Pasadena -----	373	None.	None.
Napa -----	77	None.	None.

* 3 of 18 apparently non-residents of city.

† 10 of 30 apparently non-residents of city.

‡ 3 of 9 apparently non-residents of city.

The twelve cities with proportions above the average of 15.3 per 1,000 are: Fresno, 49.3; Sacramento, 39.7; San Bernardino, 34.4; Santa Cruz, 29.9; Alameda, 26.1; San Jose, 23.1; Long Beach, 22.8; Riverside, 19.6; Watsonville, 19.4; Santa Monica, 18.2; Oakland, 16.4; and Salinas, 15.9.

Five other cities, with less than the average proportion of deaths from typhoid fever, show more than 10 deaths in each 1,000 (or 1 per cent) to be due to this cause. In decreasing order, they are Los Angeles, Stockton, San Francisco, Grass Valley, and Eureka.

There were no deaths from typhoid fever in either Pasadena or Napa in 1908. Salinas, Grass Valley, Santa Rosa, Santa Barbara, and Vallejo reported only one death each, and Watsonville, Santa Monica, and Eureka only two each in the year.

VITAL STATISTICS FOR JULY.

Marriages.—The marriages reported for July number 1,938, as compared with 1,854 for the same month last year. For an estimated State population of 2,037,929, in 1909, the July total represents an annual rate of 11.2 against 15.0 for June.

The July totals were highest for the following counties: Los Angeles, 434; San Francisco, 315; Alameda, 192; Marin, 109; Santa Clara, 97; Sacramento, 80; Orange, 72; San Diego, 59; and Fresno, 54.

The aggregate for San Francisco and the other bay counties (Alameda, Contra Costa, Marin, and San Mateo) was 652.

Births.—For July there were reported 2,530 living births, representing an annual birth-rate of 14.6, as compared with 15.0 for the preceding month. The total for the corresponding month last year was 2,497.

The totals were highest for the following counties: San Francisco, 567; Los Angeles, 557; Alameda, 320; Santa Clara, 85; Sacramento, 75; Fresno, 66; and Riverside, 61.

Altogether 1,574 births were registered in the twenty-six freeholders' charter cities, the leading cities being as follows: San Francisco, 567; Los Angeles, 375; Oakland, 163; Berkeley, 66; Sacramento, 42; Pasadena and Riverside, each 41; San Jose, 35; San Diego, 30; Stockton, 28; and Alameda and Fresno, each 27.

The aggregate for San Francisco and the transbay cities (Alameda, Berkeley, and Oakland) was 823, and for San Francisco and the other bay counties was 963. Similarly, the total for Los Angeles and neighboring chartered cities (Long Beach, Pasadena, and Santa Monica) was 449, and for the entire county was 557.

Deaths.—Altogether 2,390 deaths, exclusive of stillbirths, were reported for July, the annual death-rate being 13.8, against 15.1 for the month before. The total for the corresponding month last year was 2,482.

The death totals were highest for the following counties: Los Angeles, 530; San Francisco, 462; Alameda, 232; Santa Clara, 104; Sacramento, 103; San Joaquin, 78; San Bernardino, 64; Fresno, 60; and San Diego, 56.

There were altogether 1,345 deaths in the twenty-six freeholders'

charter cities; the highest totals being as follows: San Francisco, 462; Los Angeles, 334; Oakland, 113; Sacramento, 54; San Diego, 45; Stockton, 44; Pasadena, 37; Berkeley, 33; and San Jose, 29.

The aggregate for the urban district (San Francisco and the trans-bay cities) was 626, and for the entire metropolitan area (San Francisco and the other bay counties) was 774. Similarly, the total for Los Angeles and neighboring chartered cities was 399, and for the whole county was 530.

Causes of Death.—In July there were 348 deaths, or 14.6 per cent of all, from diseases of the circulatory system, and 344, or 14.4 per cent, from various forms of tuberculosis.

Other notable causes of death in July were: Violence, 288; diseases of the digestive system, 285; diseases of the nervous system, 239; cancer, 158; diseases of the respiratory system, 135; Bright's disease and nephritis, 130; and epidemic diseases, 105.

Typhoid fever, as usual, led among epidemic diseases with 34 deaths, against 24 for whooping-cough, 18 for diphtheria and croup, and 29 for all other epidemic diseases.

The 34 deaths from typhoid fever occurred in the following counties: Los Angeles, 6; San Francisco, 5; Alameda, 4; Sacramento and San Joaquin, each 3; Fresno and Siskiyou, each 2; and Colusa, Marin, Mendocino, San Bernardino, San Luis Obispo, San Mateo, Solano, Yolo, and Yuba, each 1.

Further particulars appear in the following table:

Deaths from Certain Principal Causes, with Proportion per 1,000 Total Deaths for Current and Preceding Month, for California: July.

Cause of Death.	Deaths: July.	Proportion per 1,000.	
		July.	June.
ALL CAUSES.....	2,390	1,000.0	1,000.0
Typhoid fever	34	14.2	12.6
Malarial fever	8	3.4	2.4
Measles	7	2.9	4.3
Scarlet fever	3	1.3	4.3
Whooping-cough	24	10.0	11.8
Diphtheria and croup	18	7.5	6.3
Influenza	2	0.8	1.2
Other epidemic diseases	9	3.8	3.9
Tuberculosis of lungs	306	128.0	118.7
Tuberculosis of other organs	38	15.9	18.9
Cancer	158	66.1	65.5
Other general diseases	92	38.5	37.5
Meningitis	29	12.1	12.2
Other diseases of nervous system	210	87.9	78.1
Diseases of circulatory system	348	145.6	148.7
Pneumonia and broncho-pneumonia	96	40.2	51.7
Other diseases of respiratory system	39	16.3	19.7
Diarrhea and enteritis, under 2 years	138	57.8	49.0
Diarrhea and enteritis, 2 years and over	29	12.1	13.4
Other diseases of digestive system	118	49.4	58.8
Bright's disease and nephritis	130	54.4	55.2
Childbirth	22	9.2	11.0
Diseases of early infancy	93	38.9	31.2
Suicide	58	24.3	28.0
Other violence	230	96.2	97.0
All other causes	151	63.2	68.6

Geographic Divisions.—Data for geographic divisions, including the metropolitan area, or “Greater San Francisco,” are as follows:

Deaths from Main Classes of Diseases, for Geographic Divisions: July.

Geographic Division.	DEATHS: JULY.										
	All Causes-----	Epidemic Diseases	Tuberculosis (All Forms)	Cancer -----	Diseases of Nervous System-----	Diseases of Circulatory System -----	Diseases of Respiratory System	Diseases of Digestive System -----	Bright's Disease and Nephritis-----	Violence -----	All Other Causes-----
THE STATE ----	2,390	105	344	158	239	348	135	285	130	288	358
<i>Northern California</i>	269	15	30	17	33	32	13	27	13	47	42
Coast counties --	132	4	16	11	22	20	7	8	6	16	22
Interior counties	137	11	14	6	11	12	6	19	7	31	20
<i>Central California</i>	1,367	63	163	96	127	224	82	166	73	165	208
San Francisco --	462	19	52	41	31	89	31	49	23	49	78
Other bay counties -----	312	15	32	15	32	49	21	41	18	46	43
Coast counties --	187	5	27	15	14	35	14	16	15	20	26
Interior counties	406	24	52	25	50	51	16	60	17	50	61
<i>Southern California</i>	754	27	151	45	79	93	40	91	44	76	108
Los Angeles ----	530	18	108	36	54	68	25	58	35	49	79
Other counties--	224	9	43	9	25	25	15	33	9	27	29
<i>Northern and Central California</i> --	1,636	78	193	113	160	256	95	193	86	212	250
Metropolitan area -----	774	34	84	56	63	138	52	90	41	95	121
Rural counties -	862	44	109	57	97	118	43	103	45	117	129

DEPARTMENT OF BACTERIOLOGY.

DR. A. R. WARD, DIRECTOR.

NOTES ON TYPHOID FEVER.

DIAGNOSIS.

Outfits designed to facilitate the collection of blood for the Widal test at the bedside, with the minimum amount of trouble, are at the disposal of physicians for the asking.

The limitations of this test should be constantly kept in mind. The experience in the Health Department laboratories of the city of New York, where it has been longest used in this country, emphasize the necessity for care in interpreting the results of the laboratory examination of the blood of a typhoid suspect. During the first week of the attack, 20 per cent only of the typhoid cases give a positive reaction by the Widal test; 60 per cent during the second week; 80 per cent during the third week, and 90 per cent during the fourth and fifth weeks. Negative results obtained early in the disease, then, may have no significance. The Widal reaction may not be obtained until the case develops the typical symptoms of the disease.

These circumstances do not invalidate the usefulness of the test in bringing to light atypical cases of the disease which do not show sufficiently marked symptoms to permit of reading a definite diagnosis from physical signs.

It is a recognized fact that typhoid bacilli may be recovered from the blood in the early stages of the disease much sooner than a positive Widal reaction may be obtained. This circumstance has been the basis of a test for typhoid fever, based upon the cultivation of typhoid bacilli in ox bile and isolating them therefrom. Attention has been called to this method in the Monthly Bulletin, Vol. IV, No. 5, October, 1908. The adaptability of the test to our conditions is under observation.

WATER EXAMINATIONS.

The fact that water is so frequently the medium for the transmission of typhoid bacilli early drew attention to the subject of the value of water examination with reference to the presence of typhoid bacilli. It has been found that the unquestionable identification of these bacilli in water is a very difficult matter, and it has been accomplished but rarely. The routine examination of water for this purpose is not feasible. When a water supply is suspected of being the cause of a typhoid fever epidemic, it is much better to verify the suspicion by determining the relation of the cases to the water supply than to rely upon the laboratory.

It has been found practicable to examine water with reference to the

existence of fecal contamination. This is based upon the fact that the colon bacillus is associated with such contamination, and its presence in water in relatively large numbers points to the possibility of typhoid pollution. The necessity for great care in the collection and shipment of samples, and the relative uncertainty of the results, greatly restrict the use of this examination in a large state like California.

VACCINATION AND SERUM THERAPEUTICS.

Tests have been made on a large scale in armies with reference to the possibility of inducing immunity in individuals by the injection of dead cultures of typhoid bacilli. The results show a reduction of the case percentage and case mortality. The procedure is available as a protective measure among individuals exposed to extraordinary danger of infection, and at the same time under discipline.

The possibility of producing a curative serum, analogous to diphtheria antitoxin, is receiving attention, but this treatment can not be regarded as generally successful as yet.

NUMBER OF EXAMINATIONS MADE DURING JULY.

Diphtheria	25
Tuberculosis	20
Typhoid	15
Water	8
Miscellaneous	3
Total	71

DEPARTMENT OF PURE FOODS AND DRUGS.

PROF. M. E. JAFFA, DIRECTOR.

“PTOMAIN POISONING.”

There seems to be some misapprehension in the minds of the people in regard to the exact form of trouble or disease that may result from eating foods of questionable quality.

Because we know of cases of typhoid fever that have undoubtedly resulted from eating oysters, or drinking polluted water or infected milk, some are apt to reason that the same disease might result from eating “canned goods,” or “spoiled meat.”

The time has come when the general public must be intelligently informed upon these subjects, for in spite of laws and regulations, the real matter of self-protection lies with the individual. Especially in this transition period that we seem to be living in, is it necessary for the laity to know the dangers that surround him, and to demand protection by *refusing* to tolerate or encourage anything but the best.

There are two separate and distinct classes of dangers to be avoided in considering food that is unfit for use, especially the sort that may cause the illness or disease.

One is the kind that carries to the system living bacteria of some special kind, which, by their growth and development in the body, cause a special disease, such as tuberculosis or typhoid fever, etc. These foods may be fresh and good and of first quality, acting merely as carriers of "germs," that may have reached them by accident; or they may be products or flesh (however fresh) of animals having that disease.

The second class of dangerous foods are those that are eaten after putrefactive changes have begun, and which cause a trouble known as ptomaine poisoning. The only relation that bacteria have to this form of trouble is that they cause the putrefaction or decay. If food were kept in such a manner as to prevent the attack of bacteria it would never "spoil." The dangerous element to the human system in "spoiled" food is the poisonous product of decomposition, and *not* the bacteria that have caused this decomposition.

The technical definition of a ptomaine is "An organic chemical compound, basic in character, and formed by the action of bacteria on nitrogenous matter." The word comes from the Greek, and means cadaver.

The kind of poison formed differs in different cases, depending upon the individual bacteria present, the nature of the material being acted upon, and the conditions under which putrefaction progresses. That which goes on where there is free access of air is usually different from that which takes place without the presence of air.

Having distinguished, now, between these two classes of dangerous foods, let us consider only the second class, the one which causes ptomaine poisoning, and see where the source of greatest danger lies. A moment's consideration will show us that *fresh food*, untampered with, *usually*, although not always, tells its own tale of decomposition by changes in appearance, odor, or taste, and is therefore discarded by the careful housekeeper or conscientious tradesman. But the material that is preserved or canned, especially when a preservative agent has been added, is not so readily detected.

There is only one really legitimate method of canning goods, and that is by the process of sterilization. As we have said before, if there are no bacteria present food will never decompose. All that is necessary is to kill the bacteria already present, and provide against the entrance of fresh ones—and our canned material will keep indefinitely in air-tight receptacles. Many people make the mistake, however, of supposing that canned goods should keep indefinitely after removal from the can. They probably confuse the process with that of salting or smoking. Unimpeachable material removed from a can may develop ptomaines in a short time. We see, therefore, that it is not always the fault of the manufacturer. Ptomaine poisoning from canned goods may result from several different causes.

1. Careless methods of canning good material.
2. Unfit material, even when skillfully canned.
 - (a) Flesh of diseased animals (possibly unrecognized).
 - (b) Material in which putrefactive changes have already begun (usually known).
3. Careless housekeeping methods, in keeping material too long after tin is opened.

Aside from the cases of ptomaine poisoning from eating canned goods, there are infrequent cases of metallic poisoning, which are different in their nature and do not properly belong to this discussion.

Let us consider the three above-named causes separately. The third requires no discussion.

The first is the least dangerous, because if putrefactive changes take place in a can of meat or vegetables, due to improper methods of canning, the condition is apt to be detected. The can will be seen to bulge before it is opened, showing the formation of gas, and when opened the contents of the tin will present an unusual appearance, often accompanied by most unpleasant and disagreeable odors.

We therefore see that the second cause, the employment of unfit material, is the most important one to consider. It is not only possible, but easy, for unscrupulous persons to so disguise decomposing food, by the use of chemical preservatives, as to give it the appearance of a first-quality article. Benzoate of soda can be used to disguise putrefactive changes that have already begun in the meat before it is canned. The poisons resulting from the decomposition are chemical in their nature, and are not destroyed by the canning process. The process does not continue, however, after the use of the preservative, so that when the tin is opened there is no gas or odor to disclose the presence of the poison. But what was there before the preservative was used is still on hand, ready to do its deadly work. From this point of view, the indiscriminate use of these chemical preservatives is a menace to the public health. The question will immediately be asked, "Why does the pure food law not forbid them?" Because, while the *spirit* of the law is, of course, to preserve the public health in *all ways*, the *letter* of the law is to prohibit the addition to food of any substance that is deleterious to health.

Now, various persons to whom this subject has been referred have not *all* been able to find that these preservatives, in themselves, have decided injurious effects upon the system. Therefore, at the present stage of these investigations, the Government can not prohibit their use. It does demand, however, that the manufacturer place upon his label the exact amount of these substances that has been employed, or that the package contains.

This brings us back to the original point we made, that the individual must protect himself. It is his responsibility as well as his privilege to make his own decision, but let him do so with his eyes open. There are many firms who put up *all goods* without using any preservatives. There are many who use preservatives for the sake of making their process more easy or more economical, but with no illegitimate purpose. There *are* those, however, who use preservatives in order to can decomposing material. The consumer may read the label, and make his choice. It is needless to say that public demand and public rejection will influence the future output.